

Corona 2020

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A thank you to independent researcher Doris Loh,
for her tremendous contribution

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What are we allowed to know?

Coronaviruses comprise a vast family of viruses, 7 of which are known to cause disease in humans. Some coronaviruses that typically infect animals have evolved to infect humans. SARS-CoV-2 is likely one such virus, postulated to have originated in a large animal and seafood market. Recent cases involve individuals who reported no contact with animal markets, suggesting that the virus is now spreading from person to person.

Severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) are also caused by coronaviruses that “jumped” from animals to humans. More than 8,000 individuals developed SARS, nearly 800 of whom died of the illness (mortality rate of approximately 10%), before it was controlled in 2003. MERS continues to resurface in sporadic cases. A total of 2,465 laboratory-confirmed cases of MERS have been reported since 2012, resulting in 850 deaths (mortality rate of 34.5%).

The full genome of SARS-CoV-2 was first posted by Chinese health authorities soon after the initial detection, facilitating viral characterization and diagnosis. The CDC analyzed the genome from the first US patient who developed the infection on January 24, 2020, concluding that the sequence is nearly identical to the sequences reported by China (*CDC. Coronavirus Disease 2019 (COVID-19): COVID-19 Situation Summary. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/summary.html>. February 29, 2020*). SARS-CoV-2 is a group 2b beta-coronavirus that has at least 70% similarity in genetic sequence to SARS-CoV. Like MERS-CoV and SARS-CoV, SARS-CoV-2 is **believed to have originated in bats**.

Prognosis and Severity of COVID-19 Compared With SARS and MERS: Early in the outbreak, WHO reported that severe cases in China had mostly been reported in adults older than 40 years old with significant comorbidities and skewed toward men, although this pattern may be changing. (*Otto MA. Wuhan Virus: What Clinicians Need to Know. Medscape Medical News. Available at <https://www.medscape.com/viewarticle/924268>. January 27, 2020*). Early reports have described COVID-19 as clinically milder than MERS or SARS in terms of severity and case fatality rate. Thus far, the fatality rate for COVID-19 appears to be around 2% (0.5-20% dependent on age group).

Covid-19: the recent history

- Illness caused by “SARS-CoV-2” (severe acute respiratory syndrome coronavirus 2) was recently termed “COVID-19” by the WHO, the new acronym derived from “coronavirus disease 2019.”
- **2019-2020 Outbreak:** As of March 6, 2020, COVID-19 has been confirmed in more than 100,000 individuals (mostly in China) and has resulted in more than 3,400 deaths. Outside of China, infections have been reported in an increasing number of countries
- In an initial report of 41 patients infected in Wuhan, China, Huang et al reported a **78% male predominance**, with 32% of all patients reporting underlying disease. The most common clinic finding was **fever (98%)**, followed by **cough (76%)** and **myalgia/fatigue (44%)**. Headache, sputum production, and diarrhea were less common. The clinical course was characterized by the development of dyspnea in 55% of patients and lymphopenia in 66%. All patients with pneumonia had abnormal lung imaging findings. **Acute respiratory distress syndrome (ARDS)** developed in 29% of patients, and ground-glass opacities are common on CT scans.

Transmission

Transmission is believed to occur via respiratory droplets from coughing and sneezing, as with other respiratory pathogens. According to the WHO, the spread of SARS-CoV-2 in China seems to be largely limited to family members, healthcare providers, and other close contacts and is probably being **transmitted by respiratory droplets.** *January 27, 2020; Accessed: January 27, 2020.*) Relatively few young children have been identified and those infected seem to have mild illness (Wei M, Yuan J, Liu Y, Fu T, Yu X, Zhang ZJ. *Novel Coronavirus Infection in Hospitalized Infants Under 1 Year of Age in China.* JAMA. 2020 Feb 14)

Recently released data have suggested that **asymptomatic patients are still able to transmit infection.** This raises concerns for the effectiveness of isolation. Zou et al followed viral expression through infection via nasal and throat swabs in a small cohort of patients. They found increases in viral loads at the time that the patients became symptomatic. One patient never developed symptoms but was **shedding virus beginning at day 7 after presumed infection** (Zou L, Ruan F, Huang M, Liang L, Huang H, Hong Z, et al. *SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients.* N Engl J Med. 2020 Feb 19)

The **incubation time** for new infections was found to be 5.2 days, with a range of **4.1-7 days.** The longest time from infection to symptoms seemed to be 12.5 days. At this point, the epidemic had been doubling approximately every 7 days, and the base reproductive number was 2.2 (meaning every patient infects an average of 2.2 others) (Li Q, Guan X, Wu P, Wang X, et al. *Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia.* N Engl J Med. 2020 Jan 29.)

US: Of the deaths in the city of Kirkland, Washington, **6 occurred in the same hospital** (Evergreen hospital). Kirkland prides itself as being one of the first towns in the US wired for 5G. Evergreen hospital has according to our own measurements the highest levels of WiFi exposure ever measured in a hospital.

Diagnosis

Government Laboratory testing: If laboratory testing confirms an alternate pathogen, SARS-CoV-2 can be excluded, although this recommendation may change in the future (*CDC Health Alert Network. Update and Interim Guidance on Outbreak of 2019 Novel Coronavirus (2019-nCoV) in Wuhan, China. CDC. Available at <https://emergency.cdc.gov/han/han00426.asp>. January 17, 2020; Accessed: January 27, 2020*)

The CDC has developed a diagnostic test for detection of the virus and has received special emergency authorization from the FDA for its use. The test is a **real-time reverse transcription–polymerase chain reaction (rRT-PCR) assay** that can be used to diagnose the virus in respiratory and serum samples from clinical specimens. (*CDC. Coronavirus Disease 2019 (COVID-19): COVID-19 Situation Summary. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/summary.html>. February 29, 2020; Accessed: March 2, 2020*)

Practical tips for the health practitioner:

Symptoms: mild to moderate **fever, dry cough**, muscle aches and fatigue

Laboratory: **Low wbc and lymphocyte count in the cbc:** Leukopenia and lymphopenia were common among early cases (*Hui DS, I Azhar E, Madani TA, Ntoumi F, Kock R, Dar O, et al. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health - The latest 2019 novel coronavirus outbreak in Wuhan, China. Int J Infect Dis. 2020 Jan 14. 91:264-266. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020 Jan 24.*)

Chest radiography: Chest radiography may reveal **pulmonary infiltrates** (*Bogoch II, Watts A, Thomas-Bachli A, Huber C, Kraemer MUG, Khan K. Pneumonia of Unknown Etiology in Wuhan, China: Potential for International Spread Via Commercial Air Travel. J Travel Med. 2020 Jan 14*)

CT scanning: CT scan may reveal ground-glass infiltrates or consolidation, almost always bilateral (*Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020 Jan 24.*)

Treatment and Prevention of COVID-19 (as reported in Medscape)

No vaccine is currently available for SARS-CoV-2. Avoidance is the principal method of deterrence. No specific antiviral treatment is recommended for COVID-19. Infected patients should receive supportive care to help alleviate symptoms. Vital organ function should be supported in severe cases. (CDC. 2019 *Novel Coronavirus, Wuhan, China: Prevention & Treatment*. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/about/prevention-treatment.html>. January 26, 2020)

According to a consensus statement from a multicenter collaboration group in China, chloroquine phosphate 500-mg twice daily in tablet form for 10 days may be considered in patients with COVID-19 pneumonia (Multicenter collaboration group of Department of Science and Technology of Guangdong Province and Health Commission of Guangdong Province for chloroquine in the treatment of novel coronavirus pneumonia. [Expert consensus on **chloroquine phosphate** for the treatment of novel coronavirus pneumonia]. *Zhonghua Jie He He Hu Xi Za Zhi*. 2020 Feb 20. 43:E019.).

Wang et al reported that chloroquine effectively inhibits SARS-CoV-2 in vitro. (Wang M, Cao R, Zhang L, Yang X, Liu J, Xu M, et al. *Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro*. *Cell Res*. 2020 Feb 4)

The same article also highlights the in-vitro effectiveness of **Nitazoxanide (Alinia, Daxon)** next to chloroquine. Alinia is very well tolerated and familiar to our patients. It was also found very effective in treating the more deadly MERS-corona virus ("Nitazoxanide, a new drug candidate for the treatment of Middle East respiratory syndrome coronavirus"; *Journal of Infection and Public Health*. Volume 9, Issue 3, May–June 2016, Pages 227-230; [Jean-François Rossignol](#)

An Effective Treatment for Coronavirus (COVID-19) - published today!

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In consultation with Stanford University School of Medicine, UAB School of Medicine and National Academy of Sciences researchers; March 13, 2020

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Summary

Recent guidelines from South Korea and China report that chloroquine is an effective antiviral therapeutic treatment against Coronavirus Disease 2019. Use of chloroquine (tablets) is showing favorable outcomes in humans infected with Coronavirus including faster time to recovery and shorter hospital stay. US CDC research shows that chloroquine also has strong potential as a prophylactic (preventative) measure against coronavirus in the lab, while we wait for a vaccine to be developed. Chloroquine is an inexpensive, globally available drug that has been in widespread human use since 1945 against malaria, autoimmune and various other conditions.

As chloroquine is not available in Korea, doctors could consider hydroxychloroquine 400mg orally per day (Hydroxychloroquine is an analog of chloroquine used against malaria, autoimmune disorders, etc. It is widely available as well).

The treatment is suitable for 7 - 10 days, which can be shortened or extended depending on clinical progress.

The UK has banned the export of Chloroquine^[13]

As of February 26, 2020, the UK government has added chloroquine to the list of medicines that cannot be parallel exported from the UK. Chloroquine was never on this list before. This likely happened because of the growing body of evidence of chloroquine's effectiveness against coronavirus.

Background

A recent [well controlled clinical study](#) conducted by Didier Raoult M.D/Ph.D, et. al in France has shown that 100% of patients that received a combination of HCQ and Azithromycin tested negative and were **virologically cured within 6 days of treatment.**

Please cite this work as Gautret et al. (2020) Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. International Journal of Antimicrobial Agents – In Press 17 March 2020 – DOI : 10.1016/j.ijantimicag.2020.105949

Results (40 patients - 20 patients in treatment group, 20 cures)

- Six patients were asymptomatic, 22 had upper respiratory tract infection symptoms and eight had lower respiratory tract infection symptoms.
- Twenty cases were treated in this study and showed a significant reduction of the viral carriage at Day 6-post inclusion compared to controls,
- and much lower average carrying duration than reported of untreated patients in the literature.
- Azithromycin added to hydroxychloroquine was significantly more efficient for virus elimination

General measures for prevention of viral respiratory infections

include the following:

- Handwashing with soap and water for at least 20 seconds. A 60% alcohol-based hand sanitizer may be used if soap and water are unavailable.
- Individuals should avoid touching their eyes, nose, and mouth with unwashed hands.
- Individuals should avoid close contact with sick people.
- Sick people should responsibly self isolate/ stay at home (e.g., from work, school).
- Coughs and sneezes should be covered with a tissue, followed by disposal of the tissue in the trash.
- Frequently touched objects and surfaces should be cleaned and disinfected regularly.
- Following the model of the Hong Kong protocol citizens are advised to wear facial masks at all times when in the presence of other people both as a means of protection and spread of the virus

Infection control: Those who are under investigation for COVID-19 should be evaluated in a private room with the door closed (an airborne infection isolation room is ideal) and asked to wear a surgical mask. All other standard contact and airborne precautions should be observed, and treating healthcare personnel should wear eye protection (*CDC. 2019 Novel Coronavirus, Wuhan, China: Interim Healthcare Infection Prevention and Control Recommendations for Patients Under Investigation for 2019 Novel Coronavirus. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/infection-control.html>. January 18, 2020*)

Corona March 2020: what all of us should also know!

Covid-19 can survive 72 hrs (some estimate up to 7 days) on surfaces outside the body. Disinfecting is crucial! Once inside the body, Covid-19 lives mostly on the surface of tissues.

Early viral attachment: there is active viral replication of SARS-CoV-2 in the throat during the first 5 days after symptoms onset. Clinical presentation and virological assessment of hospitalized cases of coronavirus disease 2019 in a travel-associated transmission cluster

<https://www.medrxiv.org/content/10.1101/2020.03.05.20030502v1.full.pdf>

ANK: with the first signs of illness (fever, sore throat, unwellness) spray propolis (KiScience Propolis Plus) - alternating with HOCL spray - frequently onto the sore throat area. Also spray HOCL in the eyes and nose (hourly or more often)

Propolis stimulates anti-viral immunity in mucous membranes (Ferreira, L. das N., et al. "Effect of the ethanolic extract from green propolis on production of antibodies after immunization against canine parvovirus (CPV) and canine coronavirus (CCoV)." *Brazilian Journal of Veterinary Research and Animal Science* 49.2 (2012): 116-121)

Advanced illness: The highest viral load was found in specimens from bronchoalveolar lavage fluid (93%), followed by sputum (72%), nasal (63%) fibrobronchoscope brush biopsy (46%), pharyngeal swabs (32%), feces (29%), and blood (1%). Interestingly, none of the 72 urine specimens tested positive for the coronavirus (Detection of SARS-CoV-2 in Different Types of Clinical Specimens | Global Health | JAMA | JAMA Network <https://jamanetwork.com/journals/jama/fullarticle/2762997>)

ANK: continue the Propolis and HOCL spray as much as circumstances allow plus add the ANK treatment suggestions (see following pages)

Stabilized HOCL: the mist that rocks

Song, Joon Young, et al. "Viral shedding and environmental cleaning in Middle East respiratory syndrome coronavirus infection." *Infection & chemotherapy* 47.4 (2015): 252-255.

Abstract: Viral shedding lasted 31 and 19 days from symptom onset in two patients with east respiratory syndrome coronavirus (MERS-CoV) pneumonia, respectively. Environmental real-time RT-PCR was weakly positive for bed guardrail and monitors. **Even after cleaning the monitors with 70% alcohol-based disinfectant, RT-PCR was still weakly positive, and converted to negative only after wiping with diluted sodium chlorite.** Further studies are required to clarify the appropriate methods to clean environments during and after treatment of patients with MERS-CoV infection.

Ono, Tomoko, et al. "Microbicidal effect of weak acid hypochlorous solution on various microorganisms." *Biocontrol science* 17.3 (2012): 129-133.

Abstract: We investigated the microbicidal effect of weak acid hypochlorous solutions of pH 5.0 - 6.0, produced by mixing NaClO and HCl in water, against various bacteria, fungi, and virus *in vitro*. The **weak acid hypochlorous solution had excellent microbicidal effect** against a broad microbicidal spectrum of standard strains and clinical isolates in a short time. The microbicidal effects of hypochlorous solutions did not depend on the available chlorine concentration but on the HOCl concentration. These results show that the **weak acid hypochlorous solution has practical applicability in such places as hospitals and establishments related to the food industry.**

Lewis, M. R. "Novel Coronavirus (2019-nCoV) Scope for Aqualution Hypochlorous Acid Solution for Effective Prevention and Control

Hypochlorous acid is not specifically tested against **2019nCoV** – no disinfectant is - but it is tested and efficacious against a wide range of microorganisms including spores, bacteria and other viruses (enveloped and non-enveloped) leading to the **reasonable conclusion that it will be effective**. hypochlorous acid is fast acting with contact times typically less than a minute. It is safe for people and safe for the environment

"Stabilized hypochlorous acid disinfection for highly vulnerable populations: Brio HOCL™ wound disinfection and area decontamination"

2017 IEEE Global Humanitarian Technology Conference (GHTC). IEEE, 2017. Rasmussen, Eric D., and Jeffrey F. Williams.

A recent certificate from UW:

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3/4/2016

To whom it may concern:

As part of our ongoing collaboration with Briotech Inc, in Washington, my microbiology laboratory has been evaluating the efficacy of BrioHOCl against human coronavirus OC43. Studies conducted to date indicate at least a 99.999% reduction in the infectivity of human coronavirus upon 10 min exposure to BrioHOCl solution. Further work is underway to characterize this important finding.

John Scott Meschke

Professor and Director of Environmental and Occupational Health Microbiology Lab Department of Environmental and Occupational Health Sciences School of Public Health, University of Washington

Current promising approaches to treatment (March 17, 2020)

Treatment of a possibly infected or diagnosed patient

1. Vitamin C: Ascorbic acid can dose-dependently inhibit NLRP3 Inflammasomes both in vitro and in vivo, decreasing IL-1 β secretion, without inducing any cytotoxic effects nor cell death (Vitamin C inhibits the activation of the NLRP3 inflammasome by scavenging mitochondrial ROS <https://www.researchgate.net/publication/305624280>)

In a press release from a Chinese hospital specializing in infectious disease it was observed that intravenous vitamin C was extremely effective in treating affected and infected patients: the dose of 100-200 mg/kg body weight was given intravenously for 3 days in a row (this equals to only 7.5 – 15 grams for a 75 kg (180 lbs.) person (大剂量维生素C治疗新冠肺炎的交二方案 发布时间: 2020-02-21 11:00:56 浏览次数: 5870). The treatment is scheduled for a government sponsored trial: "Clinical Trials.gov identifier NCT04264533, ZhiYong Peng, Zhongnan Hospital"

In the US, the pioneers of orthomolecular medicine also published a consensus paper on the use of Vit C: Orthomolecular Medicine News Service, Feb 16, 2020 "Early Large Dose Intravenous Vitamin C is the Treatment of Choice for 2019-nCov infected Pneumonia" Richard Z Cheng, MD, PhD; Hanping Shi, MD, PhD; Atsuo Yanagisawa, MD, PhD; Thomas Levy, MD, JD; Andrew Saul, PhD.

ANK Prevention: Based on the advice from the Chinese hospital staff we recommend the following to all of our patients: take a minimum of 2000 mg Vit C per day. Use a mix of liposomal/non-liposomal vit C, by adding 1-2 tsp of MicroPhos to the prepared Vit C drink and stirring it vigorously. Divide the dose in half and drink twice daily.

2. Alinia: Based on the MERS-CoV experience years ago (and the Wang article/in vitro study of Covid-19 in Cell Res 2020) gained, use 1000 mg Nitazoxanide twice daily for 10 days. Nitazoxanide is usually well tolerated.

3. Chloroquine phosphate (Plaquenil): 500 mg twice daily for 10 days (most Lyme literate MDs are familiar with the use of chloroquine and possible side effects)

4. Not published, but very similar chemical/biological properties: Artesunate (250 mg/day .v.) for 10 consecutive days (severe illness). In milder cases, artemisia annua tincture may work well (KiScience: Sweet Annie and Artemisia Forte powder)

Furins: Andrographis and Vit.C against SARS-Co2

Furin: the furin gene encodes for the furin protein. The members of this “family” process latent precursor proteins into their biologically active products. Furin is enriched in the [Golgi apparatus](#), where it functions to cleave other proteins into their mature/active forms. the envelope proteins of viruses of [SARS-CoV 2](#) must be cleaved by furin or furin-like proteases to become fully functional. (Coutard B, Valle C, de Lamballerie X, Canard B, Seidah NG, Decroly E (February 2020). "The spike glycoprotein of the new coronavirus 2019-nCoV contains a furin-like cleavage site absent in CoV of the same clade". *Antiviral Research*. **176**: 104742. [doi: 10.1016/j.antiviral.2020.104742](https://doi.org/10.1016/j.antiviral.2020.104742). PMID 32057769.)

The furin cleavage allows efficient virus entry into basically all cell types, making the COVID-19 easily transmissible at rates up to **1,000 times greater than the virulent SARS coronavirus**

The presence of furin enzymes on all cell surfaces cleaves and activates the SARS-CoV-2 in a wide range of tissues and organs. Activated SARS-CoV-2 then unleashes NLRP3 inflammasomes, initiating a flurry of immune reactions that can result in **deadly cytokine storms**. (Furin cleavage site in the SARS-CoV-2 coronavirus glycoprotein <http://www.virology.ws/2020/02/13/furin-cleavage-site-in-the-sars-cov-2-coronavirus-glycoprotein>)

Andrographis paniculata is a powerful anti-furin strategy and should be utilized early in the treatment of infected or suspected individuals! Basak, Ajoy, et al. "Inhibition of proprotein convertases-1,-7 and furin by diterpines of Andrographis paniculata and their succinoyl esters." *Biochemical Journal* 338.1 (1999): 107-113.

Basak, Ajoy. "Inhibitors of proprotein convertases." *Journal of molecular medicine* 83.11 (2005): 844-855.

Vitamin C has also been shown to have anti-furin properties (COVID-19, Furins & Hypoxia – The Vitamin C Connection – [Evolutamente.it](https://www.evolutamente.it/covid-19-furins-cancer-a-tale-of-vitamin-c-hif/) <https://www.evolutamente.it/covid-19-furins-cancer-a-tale-of-vitamin-c-hif/>)

ANK: we use either

1. **Andrographis in a KiScience synergistic mix with other herbs : “Astrasmile” (prevention: 1 dropperful 4-6 times/day; treatment: 1 dropperful hourly)**
2. **Plant based herbal mix: “Andrographis +” (prevention: 1 dropperful 4 times/day; treatment: 1 dropperful hourly)**
3. **High dose Vitamin C - Complete Ascorbate Support KiScience**

The Inflammasome, Vitamin C, Melatonin - and Humming

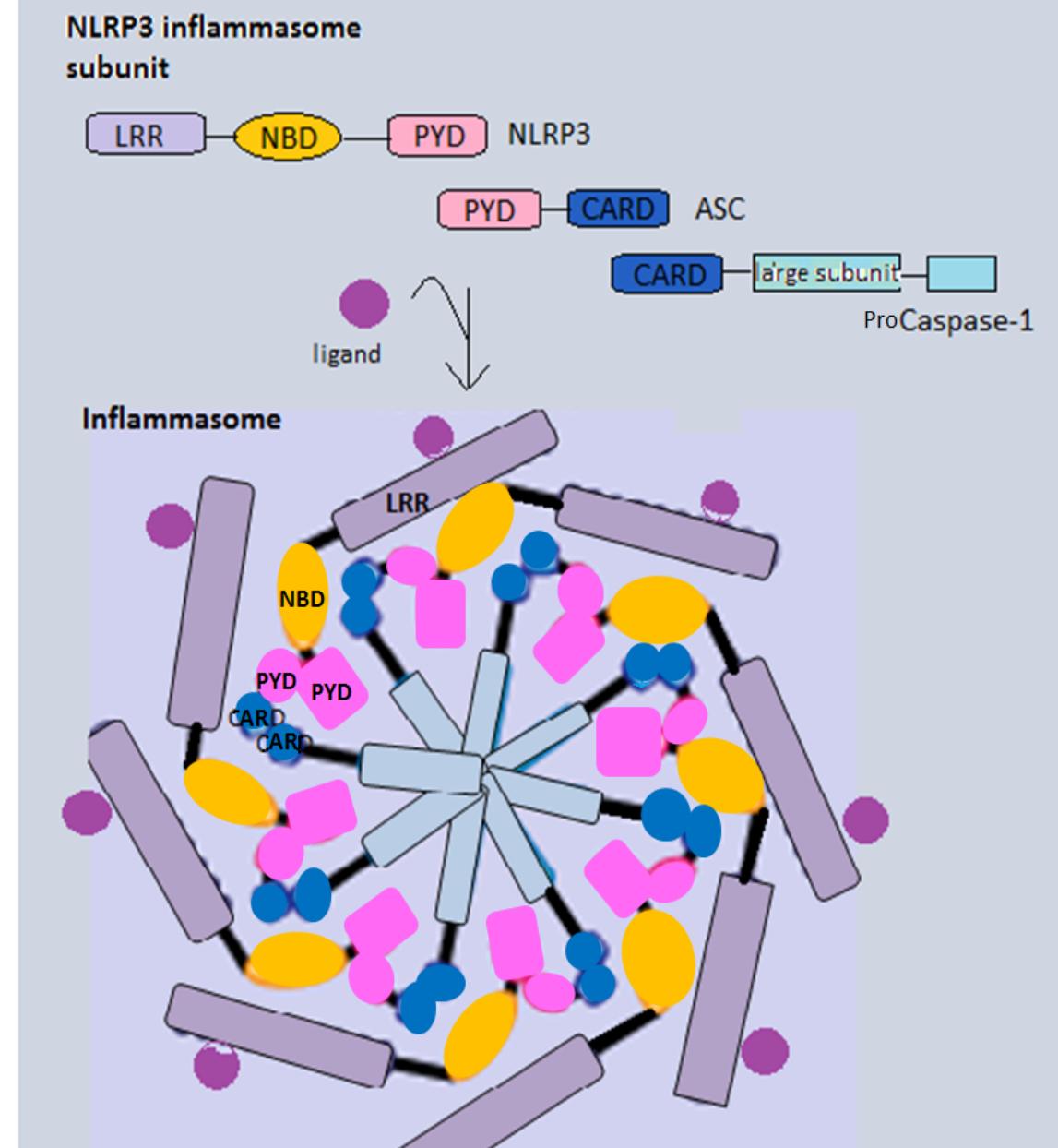
What makes Covid-19 potentially lethal is the activation of the inflammasome triggering the dreaded “cytokine storm”

Inflammasomes are multiprotein oligomers in the cytosol of the cells of the innate immune system responsible for the activation of inflammatory responses. Covid-19 activation of the inflammasome promotes the secretion of pro-inflammatory cytokines interleukin 1 β (IL-1 β) and interleukin 18 (IL-18). Recently, the **NLRP-3 inflammasome** has been identified as key to the induction of ADRS/ALI (“Acute Respiratory Distress Syndrome” and “Acute Lung Injury”)

(Critical role for the NLRP-3 inflammasome during acute lung injury

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4061751>)

Vit C, melatonin and simple humming have been shown to silence the NLRP3 inflammasome (discussion later). In countries where Melatonin is not available, propolis can be substituted.



Viroporins and the NLRP3 inflammasomes

Viroporins are ion channel proteins encoded by viruses. Viroporins are capable of assembling into ion channels or pores in the host's cell membrane, rendering it more permeable and thus facilitating the exit of virions from the cell. SARS-CoV expresses viroporins (Nieto-Torres JL, Verdiá-Báguena C, Castaño-Rodriguez C, Aguilera VM, Enjuanes L (July 2015). "Relevance of Viroporin Ion Channel Activity on Viral Replication and Pathogenesis". *Viruses*. **7** (7): 3552–73. doi: [10.3390/v7072786](https://doi.org/10.3390/v7072786). PMC 4517115. PMID 26151305.

Viroporins play critical roles in virus replication and pathogenesis – especially in the Covid-19 related cytokine storm that is responsible for the scary lung problems. SARS-CoV viroporin proteins form protein-lipid channels in cell membranes that also allow passage of calcium ions. These ion channel movements involving calcium are specific **triggers in the activation of NLRP-3 inflammasomes**, resulting in the overproduction of pro-inflammatory IL-1 β cytokines. Calcium transport through these E protein ion channels initiates the cascade of cytokine production that may eventually result in uncontrollable cytokine storms, and ARDS/ALI in bilateral interstitial pneumonia. ORF3a viroporin is **HIGHLY** expressed in infected cells.

ANK: WiFi/radiowaves also facilitate the entry of calcium into the cell, triggering the cytokine storm. Shielding and WiFi hygiene are an essential treatment of Covid-19

Melatonin

Melatonin has recently been shown to reduce IL-1 β secretion and attenuate inflammasome-associated vascular disorders by improving endothelial leakage and suppressing **NLRP3 inflammasomes** (Melatonin inhibits inflammasome-associated activation of endothelium and macrophages attenuating pulmonary arterial hypertension | Cardiovascular Research | Oxford Academic <https://academic.oup.com/cardiovascres/advance-article-abstract/doi/10.1093/cvr/cvz312/5644338?redirectedFrom=fulltext>)

This also means that if a patient, regardless of age, has adequate melatonin, the infectiousness of COVID-19 will be greatly reduced, and the chances of developing ARDS/ALI significantly diminished. Melatonin is the reason why children under the age of 9 seldom exhibit severe symptoms. In fact, children may exhibit mild or even no symptoms at all, even though they have been infected by SARS-CoV-2 (Frequently Asked Questions and Answers: Coronavirus Disease-2019 (COVID-19) and Children <https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/children-faq.html>)

Melatonin was shown to inhibit NLRP-3 inflammasomes in mice with myocardial septic conditions, transforming severe myocardial inflammation into milder symptoms, preventing cardiac failure, and significantly enhanced survival rates of septic mice (Melatonin administration to wild-type mice and nontreated NLRP3 mutant mice share similar inhibition of the inflammatory response during sepsis – Rahim – 2017 – Journal of Pineal Research – Wiley Online Library <https://onlinelibrary.wiley.com/doi/abs/10.1111/jpi.12410>)

Melatonin attenuates sepsis-induced cardiac dysfunction via a PI3K/Akt-dependent mechanism | SpringerLink <https://link.springer.com/article/10.1007%2Fs00395-015-0526-1>)

Melatonin

Volt et al. showed that acute administration of melatonin could counteract severe inflammatory responses (Same Molecule but Different Expression: Aging and Sepsis Trigger NLRP-3 Inflammasome Activation, a Target of Melatonin – PubMed

<https://pubmed.ncbi.nlm.nih.gov/26681113-same-molecule-but-different-expression-aging-and-sepsis-trigger-nlrp3-inflammasome-activation-a-target-of-melatonin/>

In rodent models of acute respiratory distress syndrome (ARDS), combined treatment of melatonin and mitochondria significantly attenuated progression of ARDS (Systemic combined melatonin–mitochondria treatment improves acute respiratory distress syndrome in the rat – Sun – 2015 – Journal of Pineal Research – Wiley Online Library <https://onlinelibrary.wiley.com/doi/10.1111/jpi.12199>)

The critical function of suppressing cytokine storms to prevent progression of acute respiratory distress syndrome (ARDS) and respiratory failure in infected patients was clearly demonstrated in a study by Huang et al. (2019). Co-treatment of these infected rodents with melatonin and an antiviral drug significantly increased their survival rates compared to mice treated only with antivirals alone (Melatonin possesses an anti-influenza potential through its immune modulatory effect – ScienceDirect

<https://www.sciencedirect.com/science/article/pii/S1756464619302452>

None of the pregnant mothers infected by COVID-19 admitted to Zhongnan Hospital of Wuhan University, Wuhan, China, **developed severe pneumonia or died; nor were their babies** infected by COVID-19 (Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records – The Lancet [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30360-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30360-3/fulltext)).

Why is mom and baby protected? Melatonin secretion in the third trimester of pregnancy is more than doubled compared to the first trimester. (Voiculescu SE, Zygouropoulos N, Zahiu CD, Zagrean AM. Role of melatonin in embryo fetal development. J Med Life. 2014;7(4):488–492.)

The death rate of this virus is dependent on age. That is very different from the regular winter flu viruses who are equally dangerous to infants and older people.

Recent reports of younger people dying of covid-19 appear to relate to individuals exposed to high levels of WiFi/EMF – which is the major known cause of decreased melatonin levels

AGE	DEATH RATE*
80+ years old	14.8%
70-79 years old	8.0%
60-69 years old	3.6%
50-59 years old	1.3%
40-49 years old	0.4%
30-39 years old	0.2%
20-29 years old	0.2%
10-19 years old	0.2%
0-9 years old	no fatalities

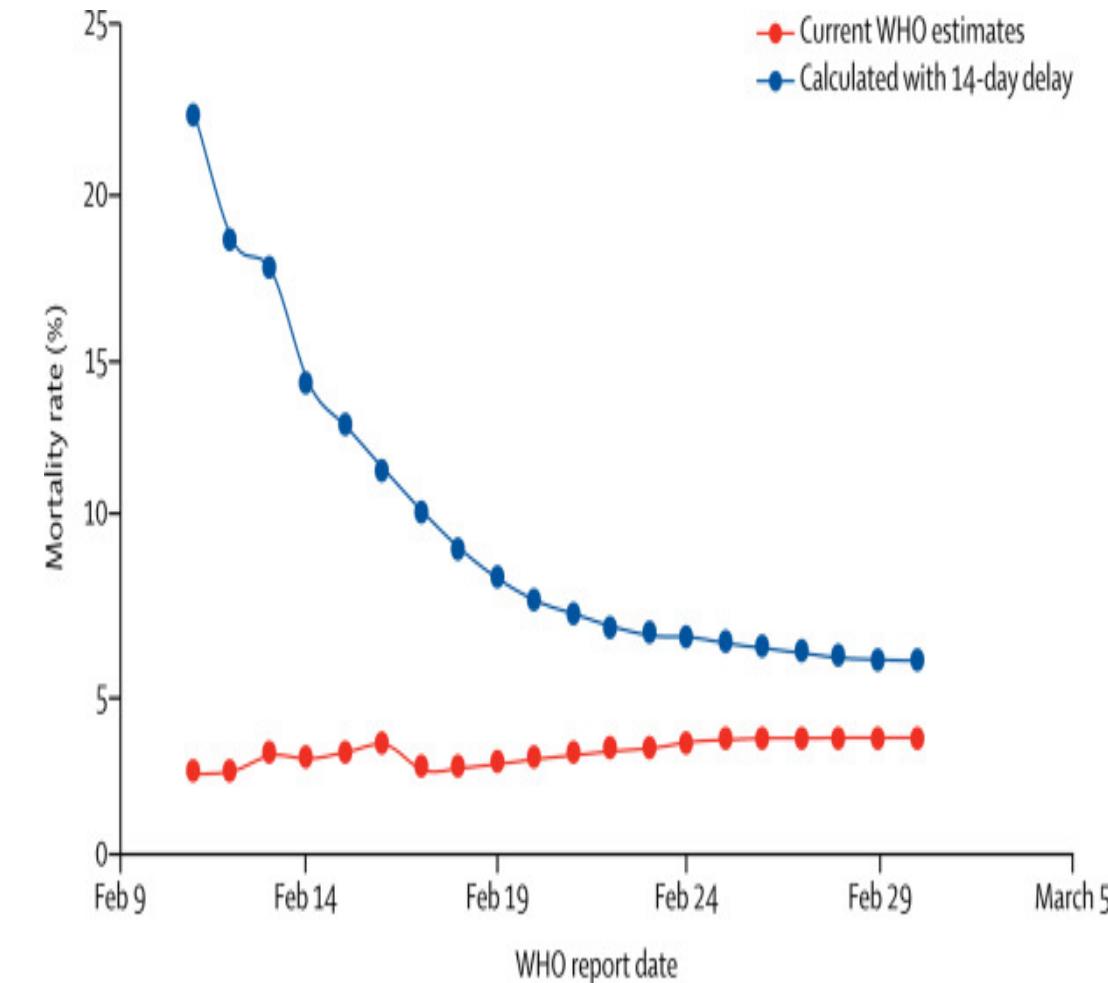
The LANCET - Infectious Diseases; March 12, 2020

Real Estimates of Mortality following COVID-19 infection; David Baud; Xiaolong Qi et al

We re-estimated mortality rates by dividing the number of deaths on a given day by the number of patients with confirmed COVID-19 infection 14 days before. On this basis, using WHO data on the cumulative number of deaths to March 1, 2020, mortality rates would be 5·6% (95% CI 5·4–5·8) for China and 15·2% (12·5–17·9) outside of China. Global mortality rates over time using a 14-day delay estimate are shown in the [figure](#), with a curve that levels off to a rate of 5·7% (5·5–5·9), converging with the current WHO estimates. Estimates will increase if a longer delay between onset of illness and death is considered. A recent time-delay adjusted estimation indicates that **mortality rate of COVID-19 could be as high as 20% in Wuhan**, the epicentre of the outbreak.

These findings show that the current figures might underestimate the potential threat of COVID-19 in symptomatic patients.

Figure Global COVID-19 mortality rates (Feb 11 to March 1, 2020)



Nitric oxide

In rodent sepsis models, **nitric oxide was demonstrated to inhibit NLRP3 activation** (Nitric oxide suppresses NLRP-3 inflammasome activation and protects against LPS-induced septic shock <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3567828/>)

Nitric oxide produced in nasal passages is part of the defense system against bacterial and viral infections (High Nitric Oxide Production in Human Paranasal Sinuses – PubMed

<https://pubmed.ncbi.nlm.nih.gov/7585069-high-nitric-oxide-production-in-human-paranasal-sinuses/?dopt=Abstract>)

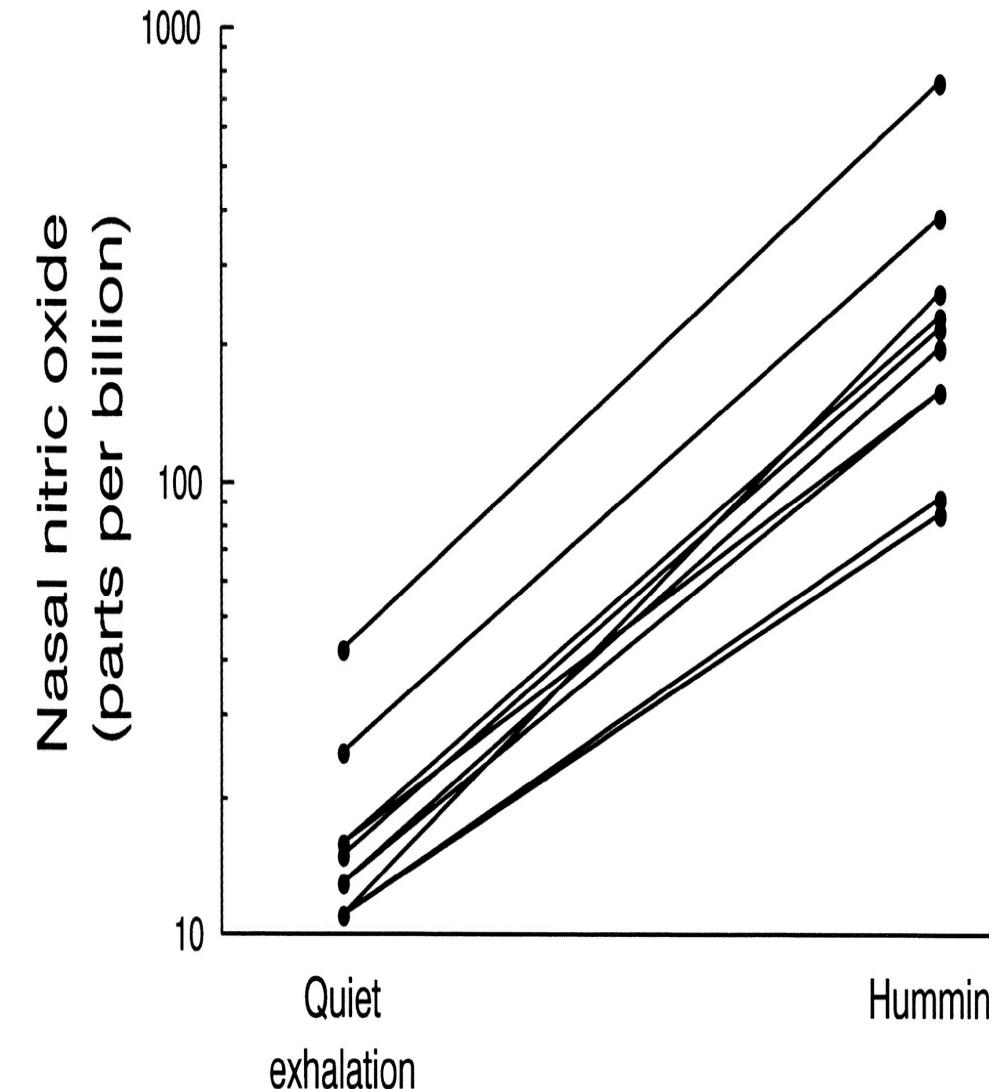
Newborns have been found to have an extremely high level of nitric oxide in their barely developed paranasal sinuses (Infant nasal nitric oxide over time: natural evolution and impact of respiratory tract infection | European Respiratory Society <https://erj.ersjournals.com/content/51/6/1702503>)

Vit C increases NO (COVID-19 Mutations, Vaccines & Nitric Oxide – The Vitamin C Connection – EvolutaMente.it

<https://www.evolutamente.it/covid-19-mutations-vaccines-nitric-oxide-the-vitamin-c-connection/>

Simple **Humming** while exhaling instantly increases the nitric oxide concentration in the nasal passages and sinuses – the very tissues, where covid-19 lingers for many days before infecting other tissues (Weitzberg, Eddie, and Jon ON Lundberg. "Humming greatly increases nasal nitric oxide." *American journal of respiratory and critical care medicine* 166.2 (2002): 144-145.)

ANK: whenever no one listens to you: hum – to prevent or treat Covid-19



Stop Angiotensin Converting Enzyme inhibitors – and Selenium!

SARS-CoV-2 infects host cells through binding with ACE-2 receptors (Receptor recognition by novel coronavirus from Wuhan: An analysis based on decade-long structural studies of SARS | Journal of Virology <https://jvi.asm.org/content/early/2020/01/23/JVI.00127-20>)

ACE inhibitors: Medical ACE inhibitors are used to treat hypertension. They are effective and believed to be safe (Synthesis, Characterization and Antioxidant Activity of Angiotensin Converting Enzyme Inhibitors – PubMed <https://pubmed.ncbi.nlm.nih.gov/21186397/>)

However, they are known to increase expression of ACE-2 and therefore are known to increase the virulence of the virus.

Selenium: Most integrative practitioners believe that selenium is a safe treatment with anti-viral properties (Dietary Selenium in Adjuvant Therapy of Viral and Bacterial Infections <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4288282/>)

However, it is little known, that nutritional selenium may also be an effective inhibitor of angiotensin-converting enzyme (ACE) (Selenium_Inhibition of angiotensin-converting enzyme by selenoneine | SpringerLink <https://link.springer.com/article/10.1007/s12562-019-01321-3?fbclid=IwAR2831B7dwtwUy6ehty61SqOr8hITdIBmRo1geTrcGXOaYnlb4bFXzVlob8>)

Using ACE inhibitors either through medication or supplements may risk elevating COVID-19 infection and developing severe or even fatal disease complications (Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection? – The Lancet Respiratory Medicine [https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(20\)30116-8/fulltext?fbclid=IwAR0_oLtc0-5KXduN0-5w6MMsrUyHfo7xDWThnXJEtPO5S1xPwnzHi8Pw7U#bib4](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30116-8/fulltext?fbclid=IwAR0_oLtc0-5KXduN0-5w6MMsrUyHfo7xDWThnXJEtPO5S1xPwnzHi8Pw7U#bib4))

The 2 main orthomolecular treatment options for SARS-Co2

(Doris Loh, independent researcher)

Melatonin: take at night, about 1 to 2 hours before sleep and 2 to 3 hours AFTER your last meal. D.Loh recommends 50 mg at night. We use up to 200 mg as suppository or skin lotion.

You should ideally finish eating before it is dark. It is also extremely helpful if you can lower your ambient lighting at night, as the lowest amount of light will disrupt melatonin production. Melatonin is produced in all cells, including mitochondria, not just in pineal glands. IF you are diabetic, or have insulin resistance, DO NOT TAKE MELATONIN before 3 pm. Melatonin is able to suppress insulin.

- **DAYTIME** – 40% of total daily dose, divided into small equal portions to be taken every TWO HOURS (orally). If you use melatonin transdermal cream, the absorption and serum levels even out for many hours. We apply up to 60 mg in the morning and again at around 2-3 pm to hairless body areas.
- **NIGHTTIME** – 60% of total daily dose, divided into two portions taken 2-3 hours after dinner. The final dose at night should be completed by 10 pm (latest).

Vitamin C: If you are older or more susceptible to COVID-19 for various reasons, your maintenance dose should be one gram per hour, to total 10-18 grams per day, depending on your tolerance level. You will experience loose stools, or what is known as hitting Bowel Tolerance if you have saturated your system with ascorbic acid.

- Ascorbic Acid COVID-19 Infection Dosage: 1 gram every 15 to 30 minutes, depending on severity of symptoms. Increase to 2 grams every 15 to 30 minutes if symptoms are not reversed within 12-24 hours.
- IF you are infected, you will essentially have an ‘unlimited’ tolerance for ascorbic acid. Your tolerance may increase above 100 grams or more. That is normal.
- If available, use intravenous Vit.C (7.5 grams – 50 grams/day) on 3 consecutive days

Other than the hygiene measures discussed earlier in this presentation, we recommend a disinfectant that does not substantially destroy the protective skin flora and still has enough anti-viral potential. I use isotonic HOCL spray - to use in my face, eyes, mouth and to repeatedly use on my hands. I also use it in an off-label way to inhale it with a micronizing inhaler (Omron) once a day for 15 minutes after seeing patients, some of whom might be incubating the infection. We nebulize it in the office and home regularly. I also recommend an herbal mix (based on reviewing the literature on natural anti corona-viral approaches).

- **Calendula** (Jan, Nelofer, and Riffat John. "Calendula officinalis-an important medicinal plant with potential biological properties." *Proceedings of the Indian National Science Academy* 83.4 (2017): 769-787)
- **Liquorice** ("Licking latency with licorice." *The Journal of clinical investigation* 115.3 (2005): 591-593.
- **Scutalaria** (Skullcap): Wu, Canrong, et al. "Analysis of therapeutic targets for SARS-CoV-2 and discovery of potential drugs by computational methods." *Acta Pharmaceutica Sinica B* (2020).
- **Rosmary** (Wu, Canrong, et al. "Analysis of therapeutic targets for SARS-CoV-2 and discovery of potential drugs by computational methods." *Acta Pharmaceutica Sinica B* (2020).
- **Andrographis** ("Broad-spectrum antiviral properties of andrographolide". Archives of Virology volume 162, pages611–623(2017). "Andrographolide treatment could increase the survival rate, diminish lung pathology, decrease the virus loads and the inflammatory cytokines expression induced by infection. Mechanism studies showed the NF- κ B and JAK-STAT signaling pathway were involved in the activity of andrographolide"). *Andrographolide inhibits influenza A virus-induced inflammation in a murine model through NF- κ B and JAK-STAT signaling pathway*. *Microbes Infect.* 2017 Dec;19(12):605-615. doi: 10.1016/j.micinf.2017.08.009. Activity of andrographolide and its derivatives against influenza virus in vivo and in vitro. *Biol Pharm Bull.* 2009 Aug;32(8):1385-91.
- **Artemisia annua** (Li, Shi-you, Cong Chen, Hai-qing Zhang, Hai-yan Guo, Hui Wang, Lin Wang, Xiang Zhang et al. "Identification of natural compounds with antiviral activities against SARS-associated coronavirus." *Antiviral research* 67, no. 1 (2005): 18-23.)
- **Dandelion** (Taraxasterol) (IN VIVO ANTI-INFLAMMATORY EFFECTS OF TARAXASTEROL AGAINST ANIMAL MODELS. *Afr J Tradit Complement Altern Med.* 2016 Nov 23;14(1):43-51. doi: 10.21010/ajtcam.v14i1.6.)

I suggest the following: Put 100 ml clean water in a blender and add the weekly dose of Vit C powder. Then add the herbal composition "**Andrographis +**" (up to 12 dropperful/day. Calculate the weekly total). Add 2 tablespoons of **Microphos** and blend for several minutes. Put this liposomal mix in a glass and keep in the fridge. Estimate one seventh of the amount, put it in a separate glass and drink the content over the day. You may use additional "**Andrographis +**" tincture frequently - depending on possible current or past exposures.

Always have a binder on board and use the ionic footbath to keep the emuntories (exit routes) free.

Almost common sense:

- Use your HOCL inhaler frequently during the day. Also spray your eyes, inside of your mouth. Use a fogger in your home once daily to create HOCL mist in the air, settling on all surfaces. Take HOCL with you and use in restaurants, workplace, coffee shop, dentist's office, etc.
- Use Propolis spray inside your mouth alternating with HOCL. Use propolis vaporizer in each room of your home for several hours/day. Alternate with HOCL. Change your clothes after being outside and don't reuse for 72 hours. Keep your shoes outside.
- Use Vit C every hour.
- Keep your Vit D level high normal
- Food: During infection, rest, drink plenty of purified water. You may lose your appetite. Do not force yourself to eat if you are not hungry. Calorie restriction initiates mitophagy and autophagy, which will facilitate healing.
- **Do not use NSAIDS (ibuprofen etc.)** ("Nonsteroidal anti-inflammatory drug without antibiotics for acute viral infection increases the empyema risk in children: a matched case-control study". *The Journal of pediatrics*, 175, 47-53 (2016); Bourgeois, M., et al)

A quick look to the dark side

Pradhan, Prashant, et al. "Uncanny similarity of unique inserts in the 2019-nCoV spike protein to HIV-1 gp120 and Gag." *bioRxiv* (2020). **DK: This article was withdrawn recently, which makes me suspicious....**

Irrefutable: The coronavirus was engineered by scientists in a lab using well documented genetic engineering vectors that leave behind a "fingerprint" Monday, February 03, 2020 by: [Mike Adams](#) . Mike is often correct.....

Journal of General Virology; [Volume 92, Issue 8, 2011](#) "The ADP-ribose-1"-monophosphatase domains of severe acute respiratory syndrome coronavirus and human coronavirus 229E mediate resistance to antiviral interferon responses" [Thomas Kuri](#), [Klara K. Eriksson](#), et al. Abstract: Several plus-strand RNA viruses encode proteins containing macrodomains. These domains possess ADP-ribose-1"-phosphatase (ADRP) activity and/or bind poly(ADP-ribose), poly(A) or poly(G). The relevance of these activities in the viral life cycle has not yet been resolved. Here, we report that **genetically engineered mutants of severe acute respiratory syndrome coronavirus (SARS-CoV) and human coronavirus 229E (HCoV-229E)** expressing ADRP-deficient macrodomains displayed an increased sensitivity to the antiviral effect of alpha interferon compared with their wild-type counterparts. The data suggest that macrodomain-associated ADRP activities may have a role in viral escape from the innate immune responses of the host.

This paper shows that poor Corona is one of the most experimented-on forms of life – and could easily be misused for destructive purposes

"I've analyzed the entire genome sequence of this virus (**Wuhan coronavirus**) and compared it to the entire genome sequences of all the other coronaviruses that we have data for, and this weird element that doesn't belong there; I've found that it actually did match a vector technology that was published in 1998 in the proceedings of the National Academy of Science.

This vector technology is a mechanism by which molecular biologists insert new genes into viruses and bacteria.

Now it's really unusual to find a vector technology sequence in a virus that's circulating in humans, and **so naturally, one thing we can say, I think for certain, is that this particular virus has a laboratory origin. So we can rule out a natural origin.**"

- James Lyons-Weiler, PhD, Institute for Pure and Applied Knowledge



Outlook

There are several ways to deal with a viral epidemic:

1. Prevent the herd-infection by massive social isolation (consequences: no health care, no food, no deliveries, no electricity, no water – all depend on people showing up at work)
2. Prevent the infection with a vaccine (the track record of success is fairly poor – look at the influenza record. Vaccines are typically on the market when the illness is almost gone)
3. Prevent the infection by using non-toxic prophylactic treatment (an example is outlined in this talk)
4. Creating true herd-immunity: Let the infection happen and support the system during the illness with non-toxic biological measures (we have decades of experience doing that with the chickenpox virus - by getting children together with an infected child and enjoying long lasting immunity after the illness)

The financial and social consequences of the current Covid-19 outbreak are astronomical.

I believe if the current knowledge about non-toxic anti-viral strategies is used together with common sense preventive measures we will get through this in a few months. Most viruses adapt and mutate to live with us - instead of dying with us - and the illness becomes milder and less aggressive – in time. The real unknown is if – or how much - human hands are involved in producing this virus and what intent might be worked into it.

I am wishing you well and hope for all of us that this blows over without any further loss of life.